WHAT IS CLAIMED IS:

1. A disc implant, comprising:

a pair of end plates for affixation to adjacent vertebral bodies; and

a pair of bearing components formed respectively on said end plates and respectively defining a pair of elongated, generally part-cylindrical bearing surfaces extending generally on orthogonal axes relative to each other.

2. The disc implant of claim 1 wherein one of said part-cylindrical bearing surfaces extends generally in an anterior-posterior direction, and the other of said part-cylindrical bearing surfaces extends generally in a medial-lateral direction.

3. The disc implant of claim 1 wherein at least one of said part-cylindrical bearing surfaces has a cross sectional shape defined by laterally spaced-apart, offset radii to include a generally flattened base segment interposed between a pair of curved sides.

4. The disc implant of claim 1 wherein one of said part-cylindrical bearing surfaces has a convex shape for articulation with the other of said part-cylindrical bearing surfaces having a concave shape.

5. The disc implant of claim 1 wherein said part-cylindrical bearing surfaces each have a convex shape, and further including an insert having opposed and generally concave recessed bearing seats defined thereon and disposed generally on orthogonal axes relative to each other for respective articulation with said part-cylindrical bearing surfaces.

6. The disc implant of claim 5 wherein at least one of said generally concave recessed bearing seats has a cross sectional shape defined by offset radii to include a generally flattened base segment interposed between a pair of curved sides.

7. The disc implant of claim 1 wherein said part-cylindrical bearing surfaces each include have an elongated shape defining opposite end segments of generally convex shape separated by a central segment defining a generally concave bearing seat.

8. The disc implant of claim 7 wherein said generally concave bearing seat of each of said part-cylindrical bearing surfaces has a cross sectional shape defined by offset radii to include a generally flattened base segment interposed between a pair of curved sides.

9. The disc implant of claim 7 wherein said opposite end segments of each of said one of said part-cylindrical bearing surfaces has a convex shape formed with increasing diametric size in a direction toward the associated concave central segment.

10. The disc implant of claim 1 wherein each of said end plates includes a lordotic taper.

11. The disc implant of claim 1 wherein at least one of said end plates has a tapered thickness increasing in a posterior to anterior direction.

12. The disc implant of claim 1 wherein each of said end plates includes means for affixation to adjacent vertebral bodies.

13. The disc implant of claim 1 wherein each of said end plates includes a porous bone ingrowth surface for affixation to adjacent vertebral bodies.

14. The disc implant of claim 13 wherein said porous bone ingrowth surface of each of said end plates has a generally convex shape for engagement with and affixation to adjacent vertebral bodies.

15. The disc implant of claim 1 wherein each of said end plates includes at least one generally axially protruding fixation element for affixation to adjacent vertebral bodies.

16. The disc implant of claim 1 wherein said pair of part-cylindrical surfaces respectively comprise a ceramic material and a biocompatible metal.

17. The disc implant of claim 5 wherein said part-cylindrical bearing surfaces and said insert comprise a ceramic material.

18. The disc implant of claim 5 wherein said pair of part-cylindrical bearing surfaces comprise a ceramic material, and wherein said insert comprises a biocompatible metal.

19. A disc implant, comprising:

a pair of end plates for affixation to adjacent vertebral bodies, said pair of end plates respectively including a pair of bearing components respectively defining a pair of elongated, generally part-cylindrical convex bearing surfaces extending generally on orthogonal axes relative to each other; and

an insert having opposed and generally concave recessed bearing seats defined thereon and disposed generally on orthogonal axes relative to each other for respective articulation with said part-cylindrical bearing surfaces.

20. The disc implant of claim 19 wherein one of said part-cylindrical bearing surfaces extends generally in an anterior-posterior direction, and the

other of said part-cylindrical bearing surfaces extends generally in a medial-lateral direction.

21. The disc implant of claim 19 wherein at least one of said generally concave recessed bearing seats has a cross sectional shape defined by laterally spaced-apart, offset radii to include a generally flattened base segment interposed between a pair of curved sides.

22. The disc implant of claim 19 wherein each of said end plates includes a lordotic taper.

23. The disc implant of claim 19 wherein at least one of said end plates has a tapered thickness increasing in a posterior to anterior direction.

24. The disc implant of claim 19 wherein each of said end plates includes means for affixation to adjacent vertebral bodies.

25. The disc implant of claim 19 wherein each of said end plates includes a porous bone ingrowth surface for affixation to adjacent vertebral bodies.

26. The disc implant of claim 25 wherein said porous bone ingrowth surface of each of said end plates has a generally convex shape for engagement with and affixation to adjacent vertebral bodies.

27. The disc implant of claim 19 wherein each of said end plates includes at least one generally axially protruding fixation element for affixation to adjacent vertebral bodies.

28. The disc implant of claim 19 wherein said bearing surfaces comprise a ceramic material.

29. The disc implant of claim 28 wherein said insert comprises a ceramic material.

30. The disc implant of claim 28 wherein said insert comprises a biocompatible metal.

31. A disc implant, comprising:

a pair of end plates for affixation to adjacent vertebral bodies; and

a pair of bearing components formed respectively on said end plates and respectively defining a pair of elongated, generally part-cylindrical bearing surfaces extending generally on orthogonal axes relative to each other;

one of said part-cylindrical bearing surfaces having a convex shape for articulation with the other of said part-cylindrical bearing surfaces having a concave shape.

32. The disc implant of claim 31 wherein one of said part-cylindrical bearing surfaces extends generally in an anterior-posterior direction, and the other of said part-cylindrical bearing surfaces extends generally in a medial-lateral direction.

33. The disc implant of claim 31 wherein at least one of said part-cylindrical bearing surfaces has a cross sectional shape defined by laterally spaced-apart, offset radii to include a generally flattened base segment interposed between a pair of curved sides.

34. The disc implant of claim 31 wherein each of said end plates includes a lordotic taper.

35. The disc implant of claim 31 wherein at least one of said end plates has a tapered thickness increasing in a posterior to anterior direction.

36. The disc implant of claim 31 wherein each of said end plates includes means for affixation to adjacent vertebral bodies.

37. The disc implant of claim 31 wherein each of said end plates includes a porous bone ingrowth surface for affixation to adjacent vertebral bodies.

38. The disc implant of claim 37 wherein said porous bone ingrowth surface of each of said end plates has a generally convex shape for engagement with and affixation to adjacent vertebral bodies.

39. The disc implant of claim 31 wherein each of said end plates includes at least one generally axially protruding fixation element for affixation to adjacent vertebral bodies.

40. The disc implant of claim 31 wherein said part-cylindrical bearing surfaces comprise a ceramic material.

41. The disc implant of claim 31 wherein said pair of part-cylindrical surfaces respectively comprise a ceramic material and a biocompatible metal.

42. A disc implant, comprising:

a pair of end plates for affixation to adjacent vertebral bodies; and

a pair of bearing components formed respectively on said end plates and respectively defining a pair of elongated bearing strip extending generally on orthogonal axes relative to each other;

each of said part-cylindrical bearing surfaces defining opposite end segments of generally convex shape separated by a central segment defining a generally concave bearing seat.

43. The disc implant of claim 42 wherein said generally concave bearing seat of each of said part-cylindrical bearing surfaces has a cross sectional shape defined by offset radii to include a generally flattened base segment interposed between a pair of curved sides.

44. The disc implant of claim 42 wherein said opposite end segments of each of said one of said part-cylindrical bearing surfaces has a convex shape formed with increasing diametric size in a direction toward the associated concave central segment.

45. The disc implant of claim 42 wherein one of said bearing surfaces extends generally in an anterior-posterior direction, and the other of said bearing surfaces extends generally in a medial-lateral direction.

46. The disc implant of claim 42 wherein each of said end plates includes a lordotic taper.

47. The disc implant of claim 42 wherein at least one of said end plates has a tapered thickness increasing in a posterior to anterior direction.

48. The disc implant of claim 42 wherein each of said end plates includes means for affixation to adjacent vertebral bodies.

49. The disc implant of claim 42 wherein each of said end plates includes a porous bone ingrowth surface for affixation to adjacent vertebral bodies.

50. The disc implant of claim 49 wherein said porous bone ingrowth surface of each of said end plates has a generally convex shape for engagement with and affixation to adjacent vertebral bodies.

51. The disc implant of claim 42 wherein each of said end plates includes at least one generally axially protruding fixation element for affixation to adjacent vertebral bodies.

52. The disc implant of claim 42 wherein said part-cylindrical bearing surfaces comprise a ceramic material.

53. The disc implant of claim 42 wherein said pair of part-cylindrical surfaces respectively comprise a ceramic material and a biocompatible metal.